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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,823	05/03/2001	Francisco A. Uribe	S-94,613	7902

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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1745

6

DATE MAILED: 12/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,823

Applicant(s)

URIBE ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-5. The claims are newly rejected under 35 USC §103, as necessitated by amendment. However, claim 5 also remains rejected under 35 USC §102 for the reasons of record. Accordingly, this action is made final.

Claim Rejections - 35 USC § 102

2. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 8-203537 (Uchida et al). The reference teaches a fuel cell comprising a polymer electrolyte membrane (2) having an electrocatalytic surface thereon in Figure 2. A porous anode backing comprising carbon particles (4; the white particles in Fig. 2(A)) abuts the electrolyte membrane at a first surface thereof. The second surface of the anode backing consists essentially of a CO oxidation catalyst layer (12) formed of a metal having at least two oxidation states in the range of 1 and 4, such as Sn, Cu, Co, or Fe (see claim 4 and Fig. 2 of the reference). In Example 1, the reference discloses that the electrocatalytic surface is formed by mixing the electrocatalyst with the polymer of the polymer electrolyte membrane, and then bonding it on an anode side of the membrane.

Regarding the recitation that the fuel cell is “usable in a reformat fuel stream containing diluted hydrogen fuel with CO as an impurity and with added air,” this limitation recites an intended use and does not have to be accorded patentable weight, pursuant to MPEP §2111.02. If a prior art structure is capable of performing the intended use as recited in the preamble, then it meets the claim. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997).

Thus, the instant claim is anticipated.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of JP 8-188783 (Junji et al).

Regarding claims 1 and 5, Uchida et al. teach a fuel cell comprising a polymer electrolyte membrane (2) having an electrocatalytic surface thereon in Figure 2. A porous anode backing comprising carbon particles (4; the white particles in Fig. 2(A)) abuts the electrolyte membrane at a first surface thereof. A CO oxidation catalyst layer (12) is present on the second surface of the anode backing (see claim 4 and Fig. 2 of the reference). Regarding claims 2 and 3, the electrocatalyst (5) is Pt or Pt/Ru alloy (see claim 3 and Example 1 of the reference). Regarding claims 1 and 5, in Example 1, the reference discloses that the electrocatalytic surface is formed by mixing the electrocatalyst with the polymer of the polymer electrolyte membrane, and then bonding it on an anode side of the membrane. Regarding claim 4, the layer of oxidation catalyst includes carbon (4), which is a hydrophobic material.

Uchida et al. do not expressly teach that the CO oxidation catalyst consists essentially of a non-precious metal (Cu, Fe, Co, Tb, W, Mo, or Sn) or oxide thereof, as recited in claim 1.

In the abstract, Junji et al. teach a CO oxidation catalyst for removing CO from a reformed gas stream. The catalyst consists of copper oxide and manganese oxide, and is preferably operated in a temperature range of 50-180 degrees C.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the disclosure of Junji et al. to use a catalyst consisting of copper and manganese oxides in the CO oxidation catalyst layer of Uchida et al. In the abstract, Junji et al. teach that this Cu-Mn catalyst composition “widely and easily reduce[s] the CO content in a reformed gas.” Accordingly, the artisan would be motivated to use a catalyst consisting of copper and manganese oxides in the CO oxidation catalyst layer of Uchida et al.

Regarding the recitation in claims 1 and 5 that the fuel cell is “usable in a reformat fuel stream containing diluted hydrogen fuel with CO as an impurity and with added air,” this limitation recites an intended use and does not have to be accorded patentable weight as stated above. Regarding the limitation in claim 5 that the catalyst is formed from a metal having at least two oxidation states in the range of 1-4, the copper disclosed by Junji et al. inherently possesses these oxidation states.

Response to Arguments

5. Applicant’s arguments filed October 23, 2002 have been fully considered but they are not persuasive, insofar as they relate to the remaining §102 rejection of claim 5. Applicants urge that “claims 1 and 5 now exclude platinum as a component of the oxidation catalyst.” However, it is submitted that the language employed in claim 5 does *not* exclude platinum. Claim 5 recites that

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“the second surface *consists essentially of* an oxidation catalyst layer effective to catalyze the oxidation of CO by oxygen present in the fuel stream where at least the layer of oxidation catalyst *is formed from* a metal having at least two oxidation states in the range of 1-4” (emphasis added). This language is interpreted as reciting that the second surface excludes components which materially alter the basic and novel characteristics of the CO catalyst layer itself (MPEP §2111.03). However, the language does *not* exclude platinum from being present in the catalyst composition. In fact, the language does not exclude any particular components from being present in the catalyst composition. The language, “formed from a metal having at least two oxidation states in the range of 1-4,” is open-ended and merely requires the presence of a metal having at least two oxidation states in the range of 1-4. Note that claim 1 recites that the catalyst “consists essentially of a non-precious metal oxidation catalyst,” which *does* exclude platinum and other precious metals.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 305-5408 or (703) 305-5433.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700

JSC

December 6, 2002